

REMARKS

Applicants have amended claims 22 and 23 to promote clarity. Claims 1-5 were previously cancelled.

Claims 6-40 are pending and under examination. Reconsideration of this application, as amended, is requested in view of the following remarks.

Rejection under 35 U.S.C. § 112

The Examiner rejects claims 22 and 23 for lack of antecedent basis. Applicants have amended these claims to rectify the defect.

Rejection under 35 U.S.C. § 103 (a)

The Examiner rejects claims 6-40 for obviousness relying on Koger et al., U.S. Patent 6,646,058 (Koger). Applicants disagree and will first discuss independent claims 6, 16, 24, and 32.

Claims 6 and 16 each cover a composition containing a thickener and a water-based copolymer latex. Claims 24 and 32 each cover a method for increasing viscosity of a vibration damping composition that contains a thickener and a water-based copolymer latex. All of these claims require that the thickener include a polymer made of, among others, 0.001-2.0 mol% an associating monomer unit.

Koger teaches a paint composition including a thickener that contains a macromonomer (corresponding to the associating monomer unit recited in claims 6, 16, 24, and 32). Yet, it is silent on the content of the macromonomer in the thickener. Thus, Koger does not render obvious claims 6, 16, 24, and 32, which require 0.001-2.0 mol% an associating monomer unit in the thickener.

Note that the Examiner asserts that Koger teaches a range of 0.5-60 wt.% for the macromonomer in the thickener and therefore concludes that "it would have been obvious to a skilled artisan to include any amount of the macromer [sic], including amounts recited in instant claims, and thereby obtain the instant invention absent evidence to criticality of the claimed range." See the Office Action, page 4, lines 14-20. Applicants would like to point out that,

contrary to the Examiner's assertion, this reference teaches a range of 0.5-60 wt.% for a macromonomer in a dispersant polymer, not in the thickener. See column 7, lines 37-42 and column 10, lines 31-39. Given the fact that the cited reference is silent on the proportion of the macromonomer in the thickener, Applicant submit that one skilled in the art would not have been motivated to arrive at the special range recited in claims 6, 16, 24, and 32. In other words, a *prima facie* case of obviousness has not been established.

Evan if Koger taught a range of 0.5-60 wt.% for a macromonomer in the thickener as asserted by the Examiner (which Applicants do not concede), the *prima facie* case of obviousness made based on this range can be successfully rebutted as set forth below:

Of note, the 0.5-60 wt.% range only overlaps a certain portion of the 0.001-2.0 mol% range (required by claims 6, 16, 24, and 32), which is about 0.1-16.9 wt.%.¹ A thickener having 0.001-2.0 mol% an associating monomer unit unexpectedly exhibits a high viscosity, which is desirable for the vibration damping composition of this invention. See page 4, lines 5-21 and page 13, lines 6-19. As pointed out in the specification, the above-mentioned range is critical for this unexpected advantage. See page 4, lines 5-21 and page 13, lines 6-19. More specifically, if the proportion of the associating monomer unit is lower than 0.001 mol%, then the thickener would not have the desired viscosity; and if the proportion of the associating monomer unit is higher than 2.0 mol%, the excessive monomer would counteract the preferred high viscosity and thus decrease the viscosity.

To this end, Applicants would like to bring to the Examiner's attention a statement in MPEP 2144.05 III:

Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. ... [T]he applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. ...

¹ Applicants apply the converting formula: $y(x) = x \cdot A / [x \cdot A + (1-x) \cdot B]$, where A is the molecular weight of the associating monomer unit, B is the molecular weight of the other units, and x and y are mol% and wt.% of the associating monomer unit, respectively. Referring to the example at page 26, lines 6-15 of the specification, an associating monomer unit (i.e., $C_{123}H_{244}O_{52}$) has a molecular weight of 832 and an alkali-soluble monomer unit (i.e., methacrylic acid) has a molecular weight of 86. Since A equals roughly to 10B here, $y(x) = x \cdot 10B / [x \cdot 10B + (1-x) \cdot B] = 10x / (9x+1)$. Accordingly, the 0.001-2.0 mol% range amounts to about 0.01-16.9 wt.%.

As mentioned above, the recited range of 0.001-2.0 mol% for the associating monomer unit is critical for unexpected results of the thickener. Thus, following the above-quoted guidance in the MPEP, even if the recited range overlaps a portion of the range of 0.5-60 wt.% disclosed in Koger, the unexpected results are sufficient to rebut the alleged *prima facie* case of obviousness. In other words, claims 6, 16, 24, and 32 are not rendered obvious by Koger.

For the reasons set forth above, claims 7-15 (dependent from claim 6), claims 17-23 (dependent from claim 16), claims 26-31 (dependent from claim 24), and claims 33-40 (dependent from claim 32) are also not rendered obvious by Koger.

CONCLUSION

For the reasons set forth above, Applicants submit that the grounds for the rejections asserted by the Examiner have been overcome and claims 6-40, as pending, cover subject matter that is unobvious over the prior art. Applicants request that all pending claims be allowed.

Enclosed is a \$450 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 50-4189.

Respectfully submitted,

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